

Proposed Project

Upper Little Patuxent

Project Number: FH1_04B

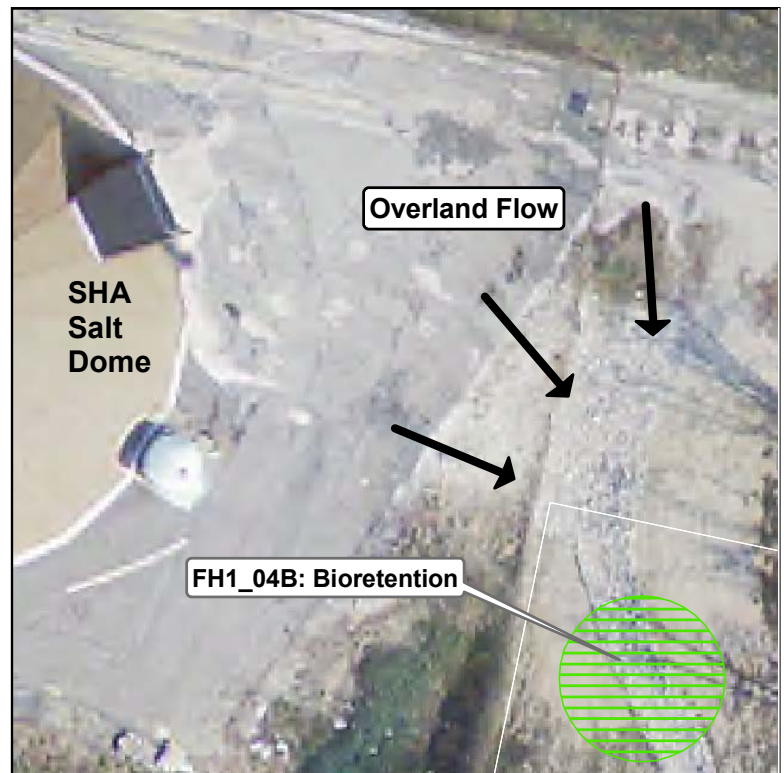
Subwatershed: Font Hill 1

Project Type: Bioretention

Project Size: 82 SY

Drainage Area: 0.47 acres/0.27 acres
impervious

Project Location: Near the State Highway
Administration (SHA) salt dome off of Route 40.



Project Description: The project is a bioretention site design to improve the quality of the discharge from the development. The project currently includes a bioretention facility to capture and treat flow from the SHA salt dome storage facility. A large amount of sediment would be anticipated from the SHA salt barn area, so any facility that receives drainage from this area would need more maintenance than usual to insure it does not clog.

As the site is located on Hydrologic Soil Group C/D soils, which do not easily infiltrate runoff, the bioretention facility would need an underdrain system to convey the filtered water downstream. The outfall of the underdrain system would be at, or just downstream of, the steep area of the riprap channel.

Project Benefits:

Water Quality	Water quality will be improved from filtration and nutrient uptake.
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Project Constraints:

Environmental	Runoff from this drainage area may contain high levels of chlorine during the winter months.
Property Ownership	This property is owned by Baltimore National Pike LLC.
Facility Access	Access to the site is excellent by parking areas.
Design / Construction	No significant design or construction issues are anticipated.

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Cost Detail:

ITEM	QTY	UNITS	UNIT COST	TOTAL
Green Technology				
Dry Swale w/ underdrain		SY	\$70.00	\$0
Dry Swale w/o underdrain		SY	\$25.00	\$0
Subsurface Infiltration (Trench)		SY	\$85.00	\$0
Filter Strip		AC	\$4,000.00	\$0
Bioswale w/ underdrain		SY	\$85.00	\$0
Bioswale w/o underdrain		SY	\$35.00	\$0
Bioretention	82	SY	\$230.00	\$18,860
			Direct Construction Subtotal	\$18,860
Indirect Costs				
E/SC, MOT, MOS (10% of Directs, minimum \$2,000 maximum \$15,000)	1	LS	\$2,000.00	\$2,000
Construction Stakeout (\$1,000/Day)	2	Days	\$2,000.00	\$2,000
			Base Construction Cost	\$22,860
			Mobilization (10% of Directs or \$1,000)	\$1,886
			Subtotal	\$24,746
			Contingency (30%)	\$7,424
			Construction Subtotal	\$32,170
			Env't'l Studies / Permitting (5% of Construction or \$5,000, where necessary)	\$5,000
			Engineering and Surveys (25% of Construction or \$30,000, maximum \$40,000)	\$30,000
			Total Capital Cost	\$67,170
Operations and Maintenance Costs				
Annual Maintenance	6	Percent	\$1,132	
Discount Rate	5	Percent		
Expected Life	20	Years		
			Net Present Value of O&M Costs	\$14,102
			Life Cycle Cost	\$81,300